

Safety Data Sheet

According to EC Directive 91/155/EEC

Date of issue: 04.04.2006
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1. Identification of the substance/preparation and of the company/undertaking

Identification of the product

Catalogue No.: 106008
Product name: Methanol extra pure Ph Eur,BP,NF

Use of the substance/preparation

Solvent
Pharmaceutical production and analysis

Company/undertaking identification

Company: Merck KGaA * 64271 Darmstadt * Germany * Phone: +49 6151 72-0
Emergency telephone No.: Please contact the regional Merck representation in your country.

2. Composition/information on ingredients

Synonyms

Methyl alcohol

CAS-No.:	67-56-1	EC-Index-No.:	603-001-00-X
M:	32.04 g/mol	EC-No.:	200-659-6
Formula Hill:	CH ₄ O		
Chemical formula:	CH ₃ OH		

3. Hazards identification

Highly flammable. Toxic by inhalation, in contact with skin and if swallowed. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

4. First aid measures

First-aid personnel: ensure self-protection!

After inhalation: fresh air.

If breathing stops: immediately apply mechanical ventilation, if necessary oxygen mask. Immediately call in physician.

After skin contact: wash off with plenty of water. Remove contaminated clothing.

After eye contact: rinse out with plenty of water with the eyelid held wide open. Call in ophthalmologist.

After swallowing: make the victim drink plenty of water, induce vomiting. Make victim drink ethanol (e.g. 1 drinking glass of a 40% alcoholic beverage). Call in physician, mentioning methanol ingestion.

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5. Fire-fighting measures

Suitable extinguishing media:
CO₂, foam, powder.

Special risks:
Combustible. Vapours heavier than air.
Forms explosive mixtures with air at ambient temperatures. Beware of backfiring.
Development of hazardous combustion gases or vapours possible in the event of fire.

Special protective equipment for fire fighting:
Do not stay in dangerous zone without self-contained breathing apparatus. In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.

Other information:
Cool container with spray water from a safe distance. Prevent fire-fighting water from entering surface water or groundwater.

6. Accidental release measures

Person-related precautionary measures:
Do not inhale vapours/aerosols. Avoid substance contact. Ensure supply of fresh air in enclosed rooms.

Environmental-protection measures:
Do not allow to enter sewerage system; risk of explosion!

Procedures for cleaning / absorption:
Take up with liquid-absorbent material (e.g. Chemizorb®). Forward for disposal. Clean up affected area.

7. Handling and storage

Handling:

Notes for prevention of fire and explosion:
Keep away from sources of ignition. Take measures to prevent electrostatic charging.

Notes for safe handling:
Work under hood. Do not inhale substance. Avoid generation of vapours/aerosols.

Storage:

Tightly closed in a well-ventilated place, away from sources of ignition and heat. Storage temperature: no restrictions.

Accessible only for authorized persons.

8. Exposure controls/personal protection

Specific control parameter

EC

Name	methanol
Value	200 ml/m ³ 260 mg/m ³
Skin resorption	Risk of skin absorption

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Personal protective equipment:

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Respiratory protection: required when vapours/aerosols are generated. Filter AX (EN 371).

Eye protection: required

Hand protection: In full contact:
Glove material: butyl rubber
Layer thickness: 0.7 mm
Breakthrough time: > 480 Min.

In splash contact:
Glove material: viton
Layer thickness: 0.70 mm
Breakthrough time: > 120 Min.

The protective gloves to be used must comply with the specifications of EC directive 89/686/EEC and the resultant standard EN374, for example KCL 898 Butoject® (full contact), 890 Vitoject® (splash contact). The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment: Flame-proof protective clothing.
Antistatic protective clothing.

Industrial hygiene:

Immediately change contaminated clothing. Apply skin-protective barrier cream. Wash hands and face after working with substance. Under no circumstances eat or drink at workplace. Work under hood. Do not inhale substance.

9. Physical and chemical properties

Form:	liquid
Colour:	colourless
Odour:	characteristic
pH value	not available
Viscosity dynamic	(20 °C) 0.597 mPa*s
Melting point	-98 °C
Boiling point	(1013 hPa) 64.5 °C
Ignition temperature	455 °C (DIN 51794)
Flash point	11 °C c.c.
Explosion limits	lower 5.5 Vol%
	upper 36.5 Vol%
Vapour pressure	(20 °C) 128 hPa
Relative vapour density	1.11
Density	(20 °C) 0.79 g/cm ³

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Solubility in water (20 °C) soluble
log Pow -0.77 (experimental) (Lit.)

10. Stability and reactivity

Conditions to be avoided

Warming.

Substances to be avoided

Risk of explosion with: oxidizing agent (i.a. perchloric acid, perchlorates, salts of oxyhalogenic acids, CrO₃, halogen oxides, nitric acid, nitrogen oxides, nonmetallic oxides, chromosulfuric acid, chlorates), hydrides, zinc diethyl, halogens, magnesium in powder form, hydrogen peroxide.

Exothermic reaction with: acid halides, acid anhydrides, acids, reducing agents.

Generates dangerous gases or fumes in contact with: alkaline earth metals and alkali metals (Release of: hydrogen).

Hazardous decomposition products

no information available

Further information

hygroscopic;
unsuitable working materials: various plastics, magnesium- and zinc alloys.
Explosible with air in a vaporous/gaseous state.

11. Toxicological information

Acute toxicity

LC₅₀ (inhalation, rat): 64000 ppm(V) /4 h (IUCLID).

LD₅₀ (oral, rat): 5628 mg/kg (IUCLID).

LDLo (oral, human): 143 mg/kg (RTECS).

The literature data available to us do not conform with the labelling prescribed by the EC. The EC has dossiers which have not been published.

Subacute to chronic toxicity

Sensitization:

Sensitization test (guinea pig): negative. (IUCLID)

Noncarcinogenic in animal experiments. (IUCLID)

Mutagenicity (mammal cell test): micronucleus negative. (in vivo) (IUCLID)

Bacterial mutagenicity: Ames test: negative. (in vitro) (IUCLID)

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Further toxicological information

After inhalation of vapours: Irritation symptoms in the respiratory tract. dizziness, dizziness, headache.

After skin contact: absorption. Drying-out effect resulting in rough and chapped skin.

After eye contact: Slight irritations. mucosal irritations.

After swallowing: absorption.

After absorption: nausea, vomiting, headache, dizziness, inebriation, impaired vision, blindness (Irreversible damage of the optical nerve.).

Systemic effects: acidosis, drop in blood pressure, agitation, spasms, narcosis, coma. Symptoms may occur after a latency period has elapsed.

Damage of: liver, kidneys, heart.

Further data

The product should be handled with the care usual when dealing with chemicals.

12. Ecological information

Abiotic degradation:
Slow degradation. (air)

Biologic degradation:
BOD 76 % from TOD /5 d (closed bottle test) (IUCLID).
Readily biodegradable (reduction: DOC >70 %; BOD >60 %; BOD₅ to COD >50 %).

Behavior in environmental compartments:
Distribution: log Pow: -0.77 (experimental) (Lit.).
No bioaccumulation is to be expected (log Pow <1).

Ecotoxic effects:
Biological effects:
When used properly, no impairments in the function of waste- water-treatment plants are to be expected.
Fish toxicity: *L.macrochirus* LC₅₀: 15400 mg/l /96 h (in soft water) (ECOTOX Database).
Daphnia toxicity: *Daphnia magna* EC₅₀: >10000 mg/l /48 h (IUCLID).
Maximum permissible toxic concentration:
Algal toxicity: *Sc.quadricauda* IC₅: 8000 mg/l /8 d (IUCLID).
Bacterial toxicity: *Ps.putida* EC₅: 6600 mg/l /16 h (Lit.).
Protozoa: *E.sulcatum* EC₅: >10000 mg/l /72 h (Lit.).

Further ecologic data:
Degradability:
BOD₅: 0.60-1.12 g/g (IUCLID).
COD: 1.42 g/g (IUCLID).
TOD: 1.5 g/g (Lit.).

Do not allow to enter waters, waste water, or soil!

13. Disposal considerations

Product:

Chemicals must be disposed of in compliance with the respective national regulations. Under www.retrologistik.de you will find country- and substance-specific information as well as contact partners.

Packaging:

Merck product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system. Under www.retrologistik.de you will find special information on the respective national conditions as well as contact partners.

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14. Transport information

Road & Rail ADR, RID
UN 1230 METHANOL, 3 (6.1), II
Inland waterway ADN, ADNR not tested
Sea IMDG-Code
UN 1230 METHANOL, 3 (6.1), II
Ems F-E S-D
Air CAO, PAX
UN 1230 METHANOL, 3 (6.1), II

The transport regulations are cited according to international regulations and in the form applicable in Germany. Possible national deviations in other countries are not considered.

15. Regulatory information

Labelling according to EC Directives

Symbol:	F T	Highly flammable Toxic
R-phrases:	11-23/24/25-39/23/24/25	Highly flammable. Toxic by inhalation, in contact with skin and if swallowed. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
S-phrases:	7-16-36/37-45	Keep container tightly closed. Keep away from sources of ignition - No smoking. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
EC-No.:	200-659-6	EC label

Reduced labelling (1999/45/EC, Art. 10, 4)

Symbol:	F T	Highly flammable Toxic
R-phrases:	23/24/25-39/23/24/25	Toxic by inhalation, in contact with skin and if swallowed. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
S-phrases:	36/37-45	Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

16. Other information

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Reason for alteration

Chapter 8: specific control parameter.
Chapter 10: stability and reactivity.
Chapter 11: toxicological information.
Chapter 12: ecological information.

General update.

Regional representation:

This information is given on the authorised Safety Data Sheet for your country.

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.